

## ABSTRACT OF THE INVENTION

[0042] A drink dispensing system for at least one dispenser valve. The system includes a carbonator, an ice storage bin having heat transfer coils therein, a two-position valve, a carbonated water circuit, a source of water and a pump circuit. The

5 two-position control valve acts in a first position to charge the carbonated tank with the source of water through a pump in the pump circuit. In a second position, the valve directs circulating flow through a closed loop carbonated water circuit which employs coils before and after the dispenser valves. A bypass around the pump allows flow at all times to the dispenser valves from the carbonator without passing through the pump.

10 A shunt divides the output of the pump such that circulation is at about 15 gallons per hour even with the pump running at 100 gallons per hour. The shunt is not coupled with the pump with the control valve in the charge position. The pump may be a two-speed pump with the higher speed employed when the control valve is in the charge position. The system also may be employed with a single-speed pump.